

Appln. No. 10/673,615
Response to Final Rejection dated February 2, 2006
Reply to Office Action of December 5, 2005

REMARKS/ARGUMENTS

Rejections

Claims 1-15, 21, 23-26, 29 and 39 are rejected under 35 USC§103(a) as being unpatentable over Wood, U.S. Patent 5,928, 745 (hereinafter Wood) and in view of Zharov, U.S. Patent 5,539,073 (hereinafter Zharov). Claims 1-15, 21, 23-26, 29 and 39 are rejected under 35 USC§103(a) as being unpatentable over Straetz, U.S. Patent 6,545,114 (hereinafter Straetz) in view of Zharov, U.S. Patent 5,539,070. Claims 27-28 are rejected under 35 USC§103(a) as being unpatentable over Wood or Straetz in view of Zharov as applied to Claim 21 above and in further view of Yang et al., U.S. Patent 6,110,554 (hereinafter Yang). Claim 30 is rejected under 35 USC§ 103(a) as being unpatentable over Wood or Straetz in view of Zharov as shown above and in further view of Chan, U.S. Patent 2002/0172,788A1 (hereinafter Chan). Applicants traverse these rejections for the reasons stated hereinafter and respectfully request withdrawal of the Rejections.

Arguments

Wood relates to an improved fuel reservoir or tank containing a barrier to the passage of fuel vapor by permeation or diffusion from the interior of the container into the environment. The solution disclosed is the addition of a particular cyclodextran to the plastic used to manufacture the fuel tanks. Wood discloses at column 3, lines 52-64: "Further the fuel tank can be prepared by joining half tank sections at a joining edge and sealing the tank using thermal welding, hot melt adhesives, thermosetting (e.g., epoxy or urethane) adhesives, flange, clamps, or other known sealing technology. ... The tanks can be manufactured with a port for a fuel pump or a fuel line, an instrument port opening, a filler tube ports (sic) and mounting flanges or other mounting means." It is further disclosed at column 7, lines 57-63: "Such tanks can be made by forming or casting a single unit or can be made by joining two or more sections into a finished unit. Such joinery can be accomplished using thermal or heat welding, adhesives (both thermoplastic and thermosetting), mechanical clamps or other joinery, etc. Further, the tanks can be formed having ports for sensor installation and for fuel inlet tubes." It is further disclosed that the resin used to make the fuel tank can be a polyolefin, see column 4, lines 59-60.

Straetz discloses providing a plastic fuel tank which consists of two halves which are initially produced in one piece by the blowing method. The two halves are

Appln. No. 10/673,615
Response to Final Rejection dated February 2, 2006
Reply to Office Action of December 5, 2005

produced in one workshop and in one mold. The plastic casing is subsequently severed at points provided for this purpose. The halves are subsequently reconnected. It is disclosed at column 2, lines 44-45 that the connection may take place by welding or adhesive bonding. At column 2, lines 6-15, it is disclosed that the polyethylene may be used as the resin for making the fuel tanks. Straetz further discloses at column 3, lines 32-47: "that fittings may be welded to the tank halves and that after the fittings have been introduced, the halves are laid one onto the other and then sealed to form a leak type connection, for example, by welding."

Zharov discloses a polymerized acrylic composition comprising an effective amount of an organoborane amine complex. Zharov further discloses that the adhesives are particularly useful in bonding low surface energy substrates, such as polyolefins.

The question presented is whether a case of *prima facie* is made out by combining the teachings of Zharov with either Wood or Straetz. More particularly, the question is whether the Final Rejection has established sufficient motivation to combine the teachings of the references. The Final Rejection at page 5, second paragraph states: "Wood et al. fail to teach that the adhesive has a lap shear strength of about 400 psi or greater and which does not require surface pretreatment of the low surface energy materials or that the adhesive comprises an amine-organoborane complex." The Final Rejection also states on page 10: "Straetz fails to teach that the adhesive has a lap shear strength of 400 psi or greater and which does not require surface pretreatment of the low surface energy materials or that the adhesive comprises an amine-organoborane complex." These statements are correct. The Final Rejection continues on page 6 by saying: "One of ordinary skill in the art would have recognized that amines-organoborane complex containing adhesives are substituted for other adhesives when the adhesive is used to bond low surface energy substrates such as polyethylene, because unlike other known adhesives the adhesive containing amine-organoborane complex can be bonded effectively to low surface energy materials without the need for costly substrate surface preparation techniques," Applicants assert that the Final Rejection establishes that it may be obvious to try the Zharov described adhesives in the application but fails to establish that one skilled in the art would expect that such an adhesive would be successful in reliably bonding the parts of a fuel tank together. First, the Final Rejection does not establish the necessary properties for adhesives used for bonding fuel tanks together. There is no demonstration that the adhesives as described in Zharov have equivalent properties for such application to the adhesives described in Wood. Nor is there

Appl. No. 10/673,615
Response to Final Rejection dated February 2, 2006
Reply to Office Action of December 5, 2005

any evidence presented that the adhesives as described in Zharov could withstand, or perform acceptably, in light of the environment and stresses applied to the adhesives in use for bonding a fuel tank. Absent a teaching or suggestion in the art that the adhesives described in Zharov have acceptable properties for this particular use, no expectation of success is established and these two Rejections must be withdrawn. Note that the Straetz reference provides no teaching or suggestion as to the type of adhesive which may be used. This argument is more expansively developed in the Response filed October 7, 2005, see page 12, last paragraph to the carry over paragraph ending on page 15. These arguments are not repeated here and are hereby incorporated by reference.

The reasons why the rejections of Claims 28-30 are improper are discussed in the above-mentioned response and those reasons are still valid and will not be repeated herein.

The Applicants wish to address several points made by the Final Rejection. The Final Rejection states on page 4: "Therefore, because Wood et al teach adhesive bonding of the fuel tanks made of high density polyethylene, Wood et al inherently teach that the adhesive bonds low energy surface materials." This statement is incorrect. As cited in the Response filed October 7, 2005, the state of the art is that low energy surfaces must be modified by surface treatment or priming in order for many adhesives to bond to such surfaces. The treatments provided change the surface from a low energy surface to a higher energy surface capable of being bonded by the adhesives known for these uses. See, in particular, the full paragraph found on page 13 of the October 7, 2005 Response.

The Final Rejection at page 5 states: "Wood et al teach a filler tube and fuel line, . . . , and obviously bonded thereto by an adhesive because it must be bonded to the tank wall opening in order to function as a filler tube or a fuel line for the fuel tank and adhesive bonding is taught by Wood et al. as a method of bonding parts of the fuel tank together." Applicants assert that this is a misreading of the teaching of Wood. Wood does not specifically teach that parts are adhesively bonded to a fuel tank. Wood and Straetz teach that halves of a fuel tank may be bonded together. Nowhere in either reference is it disclosed to bond parts to a fuel tank. In fact, Straetz specifically teaches that parts are welded to a plastic fuel tank. See column 3, lines 30-46 and more particularly 32-36. There is no teaching that an adhesive that is useful to bond the halves of a fuel tank together may be used to bond the parts to a fuel tank. The requirements and stresses placed on such parts are different than those placed on adhesives used to bond fuel tank parts together. Therefore, one

Appln. No. 10/673,615
Response to Final Rejection dated February 2, 2006
Reply to Office Action of December 5, 2005

skilled in the art would not necessarily assume that the same means of attaching halves of a fuel tank together would be used to attach parts to a fuel tank.

The Final Rejection on page 6 states: "Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to use an adhesive comprising an amine-organoborane complex, which will have the same properties as the claimed adhesive since the adhesive is the same composition, taught by Zharov et al as the adhesive joining sections of a fuel tank together to form the tank of Wood et al because the adhesive comprising an amine-organoborane complex is useful for bonding low surface energy substrates without costly surface preparation including" It appears that the Final Rejection is saying that because adhesives disclosed in Zharov have similar properties to the adhesives claimed as useful in Applicants' invention, it is therefore obvious to combine the teachings of Zharov with the teachings of Wood to achieve Applicants' claimed invention. Applicants respectfully suggest that it is improper to use the teachings of the claims being examined as the logical link for combining two prior art references. The motivation to combine the teachings must not come from the examined claims but must come from either the two references cited or a third reference. As no third reference is provided which suggests an appropriate link, the combination of Zharov, Wood or Straetz is improper.

With regards especially to Claims 21-23 and 26, the Final Rejection concludes on page 7, second paragraph: "One of ordinary skill in the art would have recognized that adhesives are also used to join fuel components to the fuel tank if adhesives are used to join sections of the fuel tank to form the tank. Also, it would have been obvious to one of ordinary skill in the art to add a second seal of adhesive to a primary seal when joining components to the fuel tank in order to increase sealability." The first issue is addressed hereinbefore. As to the second issue, none of the references cited provide any teaching or suggestion that there is a need for a second seal or that a second seal would be useful. To conclude it would be obvious to use such second seal without evidence is improper. A reference or evidence suggesting this feature which is properly combinable with one of the primary references is necessary to establish a case of *prima facie* obviousness. As no such evidence or reference is cited, it is improper to draw the conclusions drawn and the rejection of Claim 26 for this reason must be withdrawn.

The Final Rejection on page 8 concludes: "Joining components by a different method other than adhesive serves the same function and therefore any method of permanent sealing of the component to the fuel tank such as welding performs the equivalent

Appln. No. 10/673,615
Response to Final Rejection dated February 2, 2006
Reply to Office Action of December 5, 2005

function of permanently sealing the two articles together and determining which method to use is within the level of ordinary skill in the art, absent the showing of unexpected result.” The Final Rejection provides no evidence for this conclusion. Furthermore, this clearly ignores the conclusions drawn in the Declaration of Toni Ristoski filed with the October 7, 2005 Response. Toni Ristoski states that after studying this market and the technology used in this market, that at a commercial level only welding means are used to seal parts of plastic fuel tanks together. This clearly indicates that the various means of permanently sealing a fuel tank or a component to a fuel tank are not equivalent because if they were equivalent, all of these techniques would be used commercially. The burden of establishing all of the facts necessary for a case of *prima facie* obviousness lies with the U.S. Patent Office. Drawing a conclusion without evidence to support the conclusion is insufficient basis for a case of *prima facie* obviousness.

On page 9, the Final Rejection states: “Straetz teaches that the components are attached to the tank by adhesion because he teaches that the connections when forming fuel tank are either welded or adhesively bonded.” Applicants respectfully request that the Examiner clearly point out where in Straetz this is disclosed. Applicants have previously pointed out where Straetz teaches that components are attached by welding and that Straetz does not teach attaching components by use of an adhesive. The Final Rejection on page 10 further states: “One of ordinary skill in the art would have recognized that an amine-organoborane complex containing adhesives are substituted for other adhesives when the adhesive is used to bond low surface energy substrates such as polyethylene, because unlike any other known adhesives the adhesive containing amine-organoborane complex can be bonded effectively to the low surface energy material without the need for costly substrate surface preparation techniques, as taught by Zharov et al . . .” This statement ignores the relative properties of adhesives disclosed in Wood for use in bonding halves of a fuel tank together and does not address the issue of whether the adhesives as disclosed in Zharov have all of the necessary properties to work as an adhesive for bonding halves of a fuel tank together. Because no evidence is presented relative to this issue, it is improper to combine the teachings of Zharov with Straetz. More particularly, it is improper to substitute the adhesives of Zharov into the Straetz process to bond parts of a fuel tank together.

On page 11, second paragraph states: “Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant’s invention was made to use an adhesive comprising an amine-organoborane complex, which will have the same properties

Appln. No. 10/673,615
Response to Final Rejection dated February 2, 2006
Reply to Office Action of December 5, 2005

as the claimed adhesive since the adhesive is the same composition, taught by Zharov et al as the adhesive joining sections of the fuel tank together to form the tank of Straetz" This statement asserts that the adhesives claimed in Claims 8-13 are disclosed in Zharov. The amine-organoborane complexes claimed as useful in Claims 8-13 are not disclosed in Zharov.

The Final Rejection on page 11 carrying over to page 12 says: "Straetz fails to explicitly teach a means for attaching components to a fuel tank. However, Straetz teaches joining tank sections to form a tank by means of adhesive bonding (col. 2, 11.40-44). One of ordinary skill in the art would have recognized that adhesives are also used to join fuel components to the fuel tank if adhesives are used to join sections of the fuel tank to form the tank." This ignores the fact that joining halves of a fuel tank together is different than attaching parts to a fuel tank. Different stresses are applied to the surfaces and the environment may be different. No evidence is provided in the Final Rejection that adhesives useful for bonding fuel tank halves together may be used to bond parts to a fuel tank.

Commenting on the Declaration of inventor Ristoski, the Final Rejection on page 16 states: "It include(s) statements which amount to an affirmation that the affiant has never seen the claimed subject matter before. This is not relevant to the issue of nonobviousness of the claimed subject matter and provides no objective evidence thereof. See MPEP§716. Specifically, Wood et al and Straetz each teach that the sections of a fuel tank are bonded by adhesive bonding, this teaching is available to one having ordinary skill in the art regardless of whether it is commercially used in the industry." The statement in the Declaration is a description of what is used commercially. This is relevant to the issue of whether the teachings of Wood or Straetz relative to bonding halves of a fuel tank together with an adhesive are enabled. The teachings of Wood and Straetz indicate that there are a variety of techniques which may be or can be used to affix the fuel tank halves together. The teachings do not disclose specific adhesive compositions which may be used to bond halves of a fuel tank together, how to do it or the properties of a suitable adhesive for achieving the objective. The fact that adhesives are not used in the commercial arena is an indication that thermal welding is viewed in the marketplace as a superior means of bonding fuel tanks together and sealing them as compared to adhesives. It also is evidence that the teachings of Wood and Straetz may not provide sufficient enablement for one skilled in the art to actually achieve the objective to bonding fuel tanks together using an adhesive such that the fuel tanks are actually useful for the intended use. Thus, an additional argument as to why no case of *prima facie* obviousness is made out is that Woods and Straetz do not provide an enabling

Appln. No. 10/673,615
Response to Final Rejection dated February 2, 2006
Reply to Office Action of December 5, 2005

teaching as to appropriate adhesives and means of utilizing adhesives to bond fuel tank parts together.

The remarks in the Final Rejection states on page 17: "Because Zharov teaches an adhesive used specifically for bonding low energy surfaces such as polyethylene one of ordinary skill in the art would have looked to Zharov to find an adhesive to use in Wood." This ignores the fact that neither Wood, Straetz nor Zharov have defined the suitable adhesive properties which may be utilized to bond halves of fuel tanks together. Absent evidence which discloses the properties necessary for an adhesive to bond these parts together, one skilled in the art would be unable to tell whether the adhesives as described in Zharov would be suitable for such use. Absent such evidence, no expectation of success can be established and therefore there is no motivation to combine the teachings of the references.

Page 18 states: "Therefore, it would have been obvious to one having ordinary skill in the art that the adhesive of Zharov would meet the properties required of Wood such as shear strength since Zharov teaches that the adhesive forms strong bonds with low energy surfaces." This is the basis for arguing there is motivation to combine the teachings of Zharov with Wood or Straetz. Applicants assert that the Final Rejection has not established that shear strength alone is a sufficient property for determining whether an adhesive has adequate properties for use in bonding fuel tanks together. It is incumbent on the Final Rejection to clearly state what properties are required of an adhesive useful for bonding fuel tanks together and to demonstrate that the adhesives as disclosed in Zharov have such properties. As Straetz and Wood are silent as to the properties needed in an adhesive to bond a fuel tank or parts to a fuel tank, the skilled artisan is unable to determine which of a myriad of adhesives would be useful in such an application. Absent such evidence, the Final Rejection cannot establish that there is expectation of success as required to establish a case of *prima facie* obviousness.

The Final Rejection on page 19 states: "Zharov teaches the same adhesive composition as the claimed invention and the same composition must have the same properties. Mere recognition latent properties of a known article do not render that article unobvious." First, as described before, Zharov does not teach the same adhesive composition as claimed in Claims 8-13. There is no recitation in the cited art as to what are suitable properties for bonding fuel tank parts together. Whether or not the adhesives in the claims have equivalent properties to those disclosed in Zharov is not the relevant question. The

Appl. No. 10/673,615
Response to Final Rejection dated February 2, 2006
Reply to Office Action of December 5, 2005

relevant question is would one skilled in the art understand from the teachings in the art as to the necessary properties for bonding fuel tank parts together or bonding components to fuel tanks. As there is no teaching or suggestion in the art what those properties are, one skilled in the art cannot determine whether adhesives disclosed in Zharov or adhesives claimed in Claims 8-13 would have suitable properties for such use. The fact that those properties are not specifically described in Zharov again is irrelevant because the skilled artisan in view of the teachings of Straetz is not enabled to determine what is a suitable adhesive without a clear recitation of what are acceptable properties for such use.

Again on page 19, the Final Rejection states: "Zharov specifically teaches that the adhesive of Zharov is substituted for traditional adhesives that require treatment because it eliminates that costly step." Zharov does not teach that adhesives of Zharov are substituted for traditional adhesives in all applications. There is no teaching in Zharov that its adhesives can be used in this kind of application.

For the reasons stated in the Response of October 7, 2005 and herein, Applicants assert that no case of *prima facie* obviousness is made out and request withdrawal of the Final Rejection.

Respectfully submitted,



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